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12643/210

Serial No.: 09/650,335



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND PATENT INTERFERENCES

In re U.S. application of: Jeffrey A. Giacomel

U.S. Serial No.: 09/650,335

Filed: August 28, 2000

Group Art Unit: 3753

Examiner: Allen J. Flanigan

For: FOOD PREPARATION AND STORAGE DEVICE

Commissioner for Patents
Mail Stop Appeal Brief-Patents
PO Box 1450, Alexandria, VA 22313-1450

Dear Sir:

BRIEF ON APPEAL UNDER 37 C.F.R. SECTION 41.37

CERTIFICATE OF MAILING
(37 CFR 1.8a)

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail and in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450

Date: February 17, 2005

William R Gustavson

(Typed name of person mailing paper)

(Signature of person mailing paper)

This brief is filed in furtherance of the Notice of Appeal filed in this application on December 17, 2004. Enclosed please find PTO form 2038 in payment of the Appeal Fee of \$250.00. If the payment is not adequate, please withdraw any necessary fees, including any required extension fees under Section 1.136 from Deposit Account 50-1274(12643/210).

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I. REAL PARTY IN INTEREST

Jeffrey A. Giacomel is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

There are no pending related appeals or interferences. However, a previous rejection in this application was appealed and was the subject of Appeal No. 2003-1097. A copy of the Decision on Appeal is attached as an Appendix.

III. STATUS OF THE CLAIMS - RULE 41.37(c)(iii)

Claims 1, 2, 4, 6, 7, 9, 11, 20 and 24-35 have been finally rejected. Claims 30 and 34 are objected to. The rejection of claims 1, 2, 4, 6, 7, 9, 11, 20, 24-29, 31-33 and 35 is appealed.

IV. STATUS OF AMENDMENTS - RULE 41.37(c)(iv)

An Amendment after Final Rejection was filed on December 17, 2004. The Examiner refused to enter the Amendment on the grounds that the Amendment raised new issues and was not deemed to place the application in better form for appeal.

V. SUMMARY OF THE INVENTION - RULE 41.37(c)(v)

In the commercial food preparation industry, the rapid cooling or heating of food is very critical. When a large batch of food is prepared, for example a stew, beans or the like, health food regulations, and safety, requires the food to be cooled within a certain time period from the cooking temperature, (perhaps 140-165 degrees F.) to the storage temperature of 40 degrees F. The longer the food takes to cool, the longer the food will be in a temperature range conducive to the growth of harmful bacteria and the like which can spoil the food and cause illness.

The commercial food industry will often use manual labor to take large volumes of hot food and place it in plastic bags for protection and submerge the bags and food in ice baths to cool the food from the cooking temperature to the storage temperature. This is a very costly procedure given the energy and labor input that is required each time the procedure is

undertaken. In addition, the bags are used to subsequently reheat the food. This process of using bags involves physically handling food at each bag iteration. It often takes more than a four hour period to cool the food from the cooking temperature to the storage temperature. In addition to the bags and the ice baths, quite often the food is broken down into smaller pans to facilitate cooling. Again, this results in a waste of labor, energy and food and results in an increased possibility of cross-contamination. Many jurisdictions have regulations that limit the time for this cooling procedure and this must be monitored continuously.

In heating the food just before serving, time is also critical. It is desirable to keep this time as short as possible to give the preparer greater flexibility in the timing of the final meal service. Further, the shorter the interval of time to heat the food, the less time the food will be exposed to a temperature range conducive to the growth of bacteria. However, non-uniform heating of the product can cause the loss of product to burning or dehydration at the edges nearest the heat source.

The claimed invention provides a solution to these concerns. As seen in Figures 1A, 1B and 16 of the application, the device 10 is formed of heat conductive material and includes at least two input heat transfer elements in the form of fins 22 that are in parallel spaced planes for insertion within the food or other product. The device 10 includes at least one output heat transfer element (and preferably many) in the form of fin 20 in thermal contact with the input heat transfer elements 22 through the body 18 of the device 10. The output heat transfer elements 20 are exposed to an ambient temperature environment (typically the interior of a stove or refrigerator depending on whether the food is being heated or cooled) to transfer thermal energy between the product and the ambient temperature environment.

If the product is to be cooled, the input heat transfer elements 22 draw heat from the product and transfer the heat to the output heat transfer element 20 for dissipation to the ambient environment. If the product is to be heated, heat is drawn from the ambient environment into the output heat transfer element 20 and transferred to the input heat transfer elements 22 for flow into the product to heat the product uniformly and quickly. In contrast to any art cited by the Examiner, the device 10 reheats along a very predictable path and time line to a specific temperature without scorching or drying the product. The device 10 can reduce the time to reheat by 75 % over known methods. The reheat time with device 10 is $\frac{1}{2}$ to $\frac{1}{4}$ of the time achieved by the most advanced convection/infrared ovens and is superior to microwave heating in avoiding the rupture of the cellular walls of the product which causes microwave food to taste odd.

By using multiple input heat transfer elements which are in parallel spaced planes and positioned closely adjacent each other, the device 10 provides a large surface area in contact with the product, enhancing the heat flow characteristics. The product being heated or cooled flows between the adjacent fins 22 when the device 10 is inserted in the product and therefore no product will be positioned more than $\frac{1}{2}$ the spacing between the fins from a fin surface to provide for rapid heat transfer.

The device can be a single extruded body of aluminum, as shown in Figure 16 and described at Page 11, lines 9-11 and Page 13, lines 1-3. An FDA approved heat conductive coating can be applied to at least the fins of the device to facilitate cleaning and meet food handling requirements as noted in the specification at Page 11, lines 11-14.

VI. GROUNDS OF REJECTION TO BE REVIEWED - RULE 41.37(c)(vi)

Claims 1, 4, 6, 7, 24, 31, 33 and 35 were rejected under 35 U.S.C. Section 102(b) over US Patent 5,488,897 to Snyder. Claim 11 was rejected under 35 U.S.C. Section 102(b) over US Patent 3,996,847 to Reed. Claims 2, 20 and 32 were rejected under 35 U.S.C. Section 103(a) over Reed in view of Snyder. Claim 9 was rejected under 35 U.S.C. Section 103(a) over Snyder in view of US Patent 3,632,982 to Linger. Claims 25-27 were rejected under 35 U.S.C. Section 103(a) over Snyder. Claims 28 and 29 were rejected under 35 U.S.C. Section 103(a) over Reed. Claim 9 is rejected under 35 U.S.C. 112, first paragraph. Applicant respectfully traverses these rejections for the reasons set forth below.

VII. ARGUMENT - RULE 41.37(c)(vii)

A. Claims 1, 4, 6, 7, 24, 31, 33 and 35 are patentable over US Patent 5,488,897 to Snyder

1. Claim 1 is patentable over Snyder

Claim 1 recites at least two input heat transfer elements for extending into a mass of product. The Snyder patent discloses a cooking grid with peaks formed by parallel rails 10R. As stated in Snyder at Column 8, line 58, the food being cooked is placed on top of the rails for cooking. Thus, Snyder can't be a proper basis for a Section 102 rejection of claims 1, 4, 6 and 7 as it does not have elements for extending into a mass of product. The only reason Snyder has parallel rails in the first place is to form the parallel valleys for drawing away the cooking juices as explained in Column 6, lines 5-12. As noted in Snyder at Column 8, line 55, the distance from the peak to the valley is only ½ inch, and no more than 1 ½ inches. Snyder is concerned only with cooking juice, and not using input heat transfer elements for extending into a mass of product. The sides of the rails in Snyder catch drips and are not in contact with the food and do not contribute to cooling or heating.

2. Claim 4 is patentable over Snyder

Claim 4, dependent on claim 1, recites the at least two input heat transfer elements have

pan contacting surfaces. Snyder et al clearly does not disclose such structure.

3. Claim 6 is patentable over Snyder

Claim 6, dependent on claim 1, is patentable for the same reasons set forth above with respect to claim 1. In addition, as the apparatus of claim 6 requires no active heating or cooling element, the apparatus can be formed entirely of one of the listed high heat conductive materials.

4. Claim 7 is patentable over Snyder

Claim 7, dependent on claim 1, is patentable for the same reasons set forth above with respect to claim 1. In addition, Snyder requires heating elements, such as heating elements 116, and can't therefor be formed as a unitary body.

5. Claim 24 is patentable over Snyder

Claim 24, dependent on claim 1, recites the use of the apparatus with pre-cooked foods as the mass of product. Both Snyder and Reed are clearly used to cook foods. Neither patent relates to the rapid heating or cooling of pre-cooked foods.

6. Claim 31 is patentable over Snyder

Claim 31, dependent on claim 1, recites the apparatus has fins, such as fins 22, that are significantly longer than the distance separating adjacent fins. This maximizes the surface area available for contacting the mass of product when the fins are inserted therein. The maximum distance from the peak of the rails 452 to the lowest point in the valleys of Snyder is at most 1 ½ inches (Column 8, lines 53-56) which appears to be about the separation between adjacent peaks. Thus Snyder would be particularly unsuitable for insertion in a mass of product for conducting effective heat transfer.

The Examiner argues that the length recited in the claim could be readable on the long dimension of ribs 10R in Snyder. However, the length recited in Claim 31 has clear support at page 12, lines 25-28 of the application which clearly shows the length recited to be the length that extends away from the output heat transfer element and thus into the product.

7. Claim 33 is patentable over Snyder

Claim 33 recites a pan as part of the apparatus. Neither Snyder nor Reed disclose such structure. The Examiner asserts chamber 22 of Snyder is a pan. However, the chamber 22 of Snyder is not holding a mass of product.

8. Claim 35 is patentable over Snyder

Claim 35 recites the length of the input heat transfer elements is significantly greater than the thickness, again providing for efficient heat transfer to and from the mass of product. This language is supported by Figures 1A and 1B for example. Both Snyder and Reed must have rails 10R and grills 22 of significant thickness relative to other dimensions to achieve their purpose in cooking.

The Examiner again argues that the length recited in the claim could be readable on the long dimension of ribs 10R in Snyder. However, the length recited in Claim 35 has clear support at page 12, lines 25-28 of the application which clearly shows the length recited to be the length that extends away from the output heat transfer element and thus into the product.

B. Claim 11 is patentable over Reed

Claim 11 recites the apparatus is used to change the temperature of pre-cooked food. Thus, the apparatus includes heat transfer elements for extending into the pre-cooked food. Reed is intended to cook hamburgers, not to change the temperature of pre-cooked food. Thus, Reed can't be the basis for a proper Section 102 rejection of Claim 11. The present invention can cool, rethermalize and reheat.

C. Claim 9 is patentable over Snyder in view of Linger

The rejection of Claim 9 over the combination of Snyder and Linger is improper. Claim 9 recites the significant advantage of the present invention of having the temperature measured in the apparatus be essentially the same as the temperature of the mass of product, typically pre-cooked food, with which it is used. Since the apparatus is made of material with high heat conductivity, and is in intimate contact with all of the mass of product through its insertion into the product, the temperature of the apparatus is very close to the temperature of the mass of product, within 1 degree F. after acquisition of steady state heat transfer. This is very important to food safety considerations as the food must be reheated to a certain minimum temperature for food safety.

The claimed apparatus provides a very accurate indication of this critical temperature. This advantage is possible because the claimed apparatus is essentially a passive device. The apparatus is in intimate contact with the mass of product and no electric or other heat source is in the apparatus, or so near the apparatus, as to cause the temperature of the apparatus to be determined by the heating element, and not by the mass of product. In a heating device, the temperature measured is that of the heating element itself, not the temperature of the matter being heated. The Linger reference is of the type simply measuring the temperature of a heat source, and not the temperature of the matter being heated.

D. Claims 25-27 are patentable over Snyder

1. Claim 25 is patentable over Snyder

Claim 25, dependent on claim 1, recites the at least two input heat transfer elements have a length, the length being not less than 4 inches. Snyder teaches away from such dimensions by explicitly stating a distance between the peaks and valleys to be no more than 1 ½ inch at Column 8, lines 53-56 of the patent.

The Examiner asserts that Snyder discloses a "length" of the ribs 10R of the grid(the long direction as seen in the figures) that is within the claimed range. Applicant attempted in the non-entered Amendment after Final to further describe these features. However, even so, the length recited in Claim 25 has clear support at page 12, lines 25-28 which clearly shows the length recited to be the length that extends away from the output heat transfer element and thus into the product.

2. Claim 26 is patentable over Snyder

Claim 26, dependent on claim 1, recites a length for the input heat transfer elements of between 4 and 10 inches. It is thus patentable for the same reasons as set forth above with respect to claim 25.

3. Claim 27 is patentable over Snyder

Claim 27, dependent on claim 1, recites the at least two input heat transfer elements each have a leading edge extending into the mass of product, the leading edge being linear as can be clearly seen in Figures 1A, 1B 5, and 6 of the application, for example. Snyder does not have elements extending into a mass of product. Further, the rails 10R of Snyder must have a large surface area to have intimate contact with the food being cooked. This structure of Snyder could not be considered a leading edge.

E. Claims 28 and 29 are patentable over Reed

1. Claim 28 is patentable over Reed

Claim 28, dependent on claim 11, recites the at least two input heat transfer elements have a length being not less than 4 inches. Reed, in using projecting grills 22 to impale a hamburger patty, only needs grills 22 about as long as the thickness of the hamburger patty. Reed characterizes as thick a ¾ inch hamburger. The Examiner asserts length could mean the diameter of the cylindrical housing 28 of Reed(and thus the length of the longest elements 21 fitting within it). However, as discussed, the length recited in Claim 28 has clear support at page 12, lines 25-28 of the application which clearly shows the length recited to be the length that

extends away from the output heat transfer element and thus into the product.

2. Claim 29 is patentable over Reed

Claim 29, dependent on claim 11, recites the at least two input heat transfer elements have a length being in the range of 4 to 10 inches. Thus claim 29 is patentable for the same reasons set forth above for claim 28.

F. Claims 2, 20 and 32 are patentable over Reed and Snyder

1. Claim 2 is patentable over Reed and Snyder

The rejection of Claim 2 over the combination of Snyder and Reed is respectfully traversed. There is no incentive to combine the teachings of these references. Snyder uses dedicated heat sources, such as electric heater rods, to heat the cooking grid 10. Snyder would have no use for air contact fins or rectangular fins. Snyder thus teaches away from the combination. Reed, in turn, also has no incentive to combine its teaches with Snyder. Reed teaches impaling hamburgers with projecting grills 22. Snyder simply lays food to be cooked on top of its rails.

2. Claim 20 is patentable over Reed and Snyder

Claim 20, dependent on claim 1, recites the at least two input heat transfer elements are rectangular fins. This claim is patentable for the same reasons set forth above with respect to claim 2.

3. Claim 32 is patentable over Reed and Snyder

Claim 32, dependent on claim 1, recites said at least two input heat transfer elements are each fins having first and second major fin surface areas, the fin surface areas being generally parallel flat, planar surfaces for extending into the mass of product, the output heat transfer element being a fin having first and second major fin surface areas, the fin surface areas of the output heat transfer element being generally parallel each other and generally parallel the surface areas of the input heat transfer elements. Neither Reed nor Snyder et al disclose such structure.

G. Claim 9 satisfies the requirements of 35 USC Section 112

Claim 9 was rejected under 35 USC Section 112, 1st paragraph as the Examiner states the claim is confusingly worded and is not supported by the disclosure. Again, while Applicant attempted to further describe the claimed invention in the Amendment after Final Rejection that

the Examiner refused to enter, even as its stands, Claim 9 is believed to satisfy this statutory section.

Claim 9 recites a temperature monitor for monitoring a temperature of one of the said heat transfer elements, the temperature being an accurate measure of the temperature of the mass of product. Since the apparatus is made of material with high heat conductivity, and is in intimate contact with all of the mass of product through its insertion into the product, the temperature of the apparatus is very close to the temperature of the mass of product, within 1 degree F. after acquisition of steady state heat transfer. This is very important to food safety considerations as the food must be reheated to a certain minimum temperature for food safety.

The claimed apparatus provides a very accurate indication of this critical temperature. This advantage is possible because the claimed apparatus is essentially a passive device. The apparatus is in intimate contact with the mass of product and no electric or other heat source is in the apparatus, or so near the apparatus, as to cause the temperature of the apparatus to be determined by the heating element, and not by the mass of product. In a heating device, the temperature measured is that of the heating element itself, not the temperature of the matter being heated.


The Examiner has asserted that the temperature of different regions into which the apparatus may be inserted will most definitely vary. However, the claim should be read in light of the intended function of the invention, such as cooling or reheating product like food. Within the context of this environment, the temperature monitor will give an indication of the temperature of the mass of product to the degree of accuracy needed. The Examiner also asserts that the simple temperature indicator using a bimetallic or shape alloy such as disclosed in the application is unable to accurately indicate such a measure. Again, Applicant asserts that the accuracy is adequate for the intended purpose as disclosed in the application and therefor meets the requirements of Section 112.

CONCLUSION

For the reasons set forth above, allowance of claims 1, 2, 4, 6, 7, 9, 11, 20 and 24-35 is respectfully requested.

Attached is an Appendix containing a copy of the appealed claims.

Respectfully Submitted,

By: 
William R. Gustavson
Registration No. 29,160
Attorneys for Applicant

WRG:bg
Thompson & Gustavson, L.L.P.
February 16, 2005
Suite 1185
9330 LBJ Frwy.
Dallas, Texas 75243
(972) 479-0903

APPENDIX - RULE 41.37(c)(viii)

- Claim 1. An apparatus for rapidly changing the temperature of a mass of product, comprising:
at least two input heat transfer elements for extending into the mass of product, the input heat transfer elements being in parallel spaced planes;
at least one output heat transfer element in thermal contact with the input heat transfer elements and exposed to an ambient temperature environment to transfer thermal energy between the product mass and the ambient temperature environment, said at least two input heat transfer elements having a coating to facilitate cleaning.
- Claim 2. The apparatus of Claim 1 wherein said at least one output heat transfer element defines a plurality of air contact fins.
- Claim 4. The apparatus of Claim 1 wherein the mass of product is in a pan, the pan having a bottom, said at least two input heat transfer elements having pan contacting surfaces, said at least two input heat transfer elements adapted for contacting the bottom of the pan.
- Claim 6. The apparatus of Claim 1 wherein the at least two input heat transfer elements and at least one output heat transfer element are formed of a material selected from the group consisting of aluminum, stainless steel, cast iron and copper.
- Claim 7. The apparatus of Claim 1 wherein the at least two input heat transfer elements and at least one output heat transfer element are formed as a unitary body.
- Claim 9. An apparatus for rapidly changing the temperature of a mass of product, comprising:
at least two input heat transfer elements for extending into the mass of product, the input heat transfer elements being in parallel spaced planes;
at least one output heat transfer element in thermal contact with the input heat transfer elements and exposed to an ambient temperature environment to transfer thermal energy between the product mass and the ambient temperature environment; and
a temperature monitor for monitoring a temperature of one of said heat transfer elements, the temperature being an accurate measure of the temperature of the mass of product.
- Claim 11. An apparatus for rapidly changing the temperature of pre-cooked food, comprising:
at least two input heat transfer elements for extending into the pre-cooked food, the input heat transfer elements being in parallel spaced planes;
at least one output heat transfer element in thermal contact with the input heat transfer elements and exposed to an ambient temperature environment to transfer thermal energy between the product mass and the ambient temperature environment; and

a removable handle to move said apparatus.

Claim 20. The apparatus of claim 1 wherein said at least two input heat transfer elements are rectangular fins.

Claim 24. The apparatus of claim 1 wherein the mass of product is pre-cooked food, the at least two input heat transfer elements for extending into the pre-cooked food.

Claim 25. The apparatus of claim 1 wherein the at least two input heat transfer elements have a length, the length being not less than 4 inches.

Claim 26. The apparatus of claim 1 wherein the at least two input heat transfer elements have a length, the length being in the range of 4 to 10 inches.

Claim 27. The apparatus of claim 1 wherein the at least two input heat transfer elements each have a leading edge extending into the mass of product, the leading edge being linear.

Claim 28. The apparatus of claim 11 wherein the at least two input heat transfer elements have a length, the length being not less than 4 inches.

Claim 29. The apparatus of claim 11 wherein the at least two input heat transfer elements have a length, the length being in the range of 4 to 10 inches.

Claim 31. The apparatus of claim 1 wherein said at least two input heat transfer elements each have a length, adjacent input heat transfer elements separated by a predetermined separation, the length of said input heat transfer elements being significantly longer than said separation between adjacent input heat transfer elements.

Claim 32. The apparatus of claim 1 wherein said at least two input heat transfer elements are each fins having first and second major fin surface areas, the fin surface areas being generally parallel flat, planar surfaces for extending into the mass of product, the output heat transfer element being a fin having first and second major fin surface areas, the fin surface areas of the output heat transfer element being generally parallel each other and generally parallel the surface areas of the input heat transfer elements.

Claim 33. The apparatus of claim 1 further comprising a pan for holding the mass of product, the at least two input heat transfer elements for extending into the mass of product within the pan.

Claim 35. The apparatus of claim 1 wherein each of the input heat transfer elements have a length and a thickness, the length being significantly greater than the thickness.

APPENDIX - RULE 41.37(c)(x)

A copy of the Decision on Appeal of Appeal No. 2003-1097 is attached in accordance with Rule 41.37(c)(x).

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 20



UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JEFFREY A. GIACOMEL

Appeal No. 2003-1097
Application 09/650,335

ON BRIEF

MAILED

SEP 29 2003

PAT. & T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Before COHEN, FRANKFORT, and STAAB, Administrative Patent Judges.
FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1, 2, 4, 6, 7 and 20 through 23. Claims 3, 5, 8 and 10 have been withdrawn from further consideration by the examiner as being directed to non-elected species. Claims 9 and 11, the only other claims remaining in the application, have been indicated to contain allowable subject matter, but are objected

to on grounds that they depend from rejected claims. Claims 12 through 19 have been canceled.

Appellant's invention is directed to an apparatus used for rapidly changing the temperature of a mass of product. Independent claim 1 is exemplary of the subject matter on appeal and reads as follows:

1. An apparatus for rapidly changing the temperature of a mass of product, comprising:

at least two input heat transfer elements extending into the mass of product, the input heat transfer elements being in parallel spaced planes;

at least one output heat transfer element in thermal contact with the input heat transfer elements and exposed to an ambient temperature environment to transfer thermal energy between the product mass and the ambient temperature environment.

The sole prior art reference relied upon by the examiner in rejecting the appealed claims is:

Root et al. (Root)	3,229,757	Jan. 18, 1966
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Claims 1 and 4 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regard as the invention.

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Application 09/650,335

Claims 1, 2, 6, 7, 20, 22 and 23 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Root.

Claim 21 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Root.

Rather than attempt to reiterate the examiner's full commentary with regard to the above-noted rejections and the conflicting viewpoints advanced by the examiner and appellant regarding the rejections, we make reference to the examiner's answer (Paper No. 16, mailed December 12, 2002) for the reasoning in support of the rejections, and to appellant's brief (Paper No. 15, filed October 26, 2002) and reply brief (Paper No. 17, filed February 19, 2003) for the arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to appellant's specification and claims, to the applied Root patent, and to the respective positions articulated by appellant and the examiner. As a consequence of our review, we have made the determinations which follow.

With regard to the examiner's rejection of claims 1 and 4 under 35 U.S.C. § 112, second paragraph, as being indefinite, we are in agreement with the examiner as to the ambiguity concerning whether these claims are directed to the heat exchange apparatus *per se* or to the heat exchange apparatus in combination with other components, e.g., the "mass of product" in claim 1, line 3, or the "pan" in claim 4. Claim 1 appears to be directed to the apparatus *per se*, but includes a positive recitation of at least two input heat transfer elements therein "extending into the mass of product." If, as appellant asserts in the brief and reply brief, it is not intended that claim 1 claim the mass of product, then claim 1 should be amended to particularly point out and distinctly claim the subject matter which applicant regards as the invention. For example, claim 1 might be amended to more particularly define the apparatus as comprising at least two input heat transfer elements "for extending into the mass of product" or "adapted to extend into a mass of product."

As for claim 4, this claim sets forth that the mass of product inferentially mentioned in the preamble of claim 1 is "in a pan" and then includes the further limitation of "said at least one input heat transfer element contacting the bottom of the

pan." This claim is indefinite because there is no proper antecedent basis for "said at least one input heat transfer element" (emphasis added) and because the pan appears to be positively recited as forming part of the apparatus. If, as appellant asserts in the brief and reply brief, it is not intended that the mass of product or the pan be elements of claim 4, then claim 4 should be amended to particularly point out and distinctly claim the subject matter which applicant regards as the invention. For example, claim 4 might be amended to more particularly define the apparatus as including "said at least two input heat transfer elements adapted for contacting the bottom of the pan."

Notwithstanding appellant's right to define an environment for the elements of the claim, the scope of the claim must nonetheless be clear and definite and thus comply with the requirements of 35 U.S.C. § 112, second paragraph. In the present case, claims 1 and 4 on appeal do not comply with the requirements of 35 U.S.C. § 112, second paragraph, and for that reason the examiner's rejection of claims 1 and 4 as being indefinite is sustained.

The next rejection for our review is that of claims 1, 2, 6, 7, 20, 22 and 23 under 35 U.S.C. § 102(b) as being anticipated by Root.¹ In this instance, the examiner has determined that the heat dissipator apparatus of Root corresponds exactly to the structure of the heat exchange apparatus set for in the above enumerated claims on appeal. More specifically, the examiner has found that the one-piece, extruded aluminum heat exchange apparatus of Root includes two banks of parallel heat distribution fins (a, b, c, d and w, x, y, z) integrally connected with a web member (17, 18, 19). In the examiner's view, while Root does not disclose the use intended by appellant, the apparatus of Root is fully capable of such use and clearly includes heat transfer fins on one side of the web member, for

¹ In addressing this rejection, we have construed claim 1 on appeal in the manner urged in appellant's brief and reply brief, i.e., as not including the mass of product as an element of the claim. However, we commend to the attention of appellant and the examiner U.S. Patent No. 2,688,467 to R. W. Leatzow, which patent is of record in the present application and discloses a device for cooling beverages wherein a lower portion of the device includes at least two input heat transfer elements or fins located in parallel spaced planes and extending into a mass of product (beverage) and wherein the device further includes an upper portion carrying a multiplicity of output heat transfer elements in thermal contact (communication) with the input heat transfer elements and exposed to an ambient temperature environment to transfer thermal energy between the product mass and the ambient temperature environment.

example, the lower side as seen in Figure 1 of Root, which fins are capable of serving as input heat transfer elements if located in a mass of product, and heat transfer fins on the opposite side of the web member (upper side as seen in Fig. 1 of Root) which are capable of serving as output heat transfer elements and of being exposed to an ambient temperature environment so as to transfer thermal energy between a mass of product in which the input heat transfer elements may be located and the ambient temperature environment.

An anticipation under 35 U.S.C. 102(b) is established when a single prior art reference discloses, either expressly or under principles of inherency, each and every element or limitation of a claimed invention. See In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed Cir 1997) and RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984). However, we observe that the law of anticipation does not require that the reference teach what the appellant has disclosed but only that the claims on appeal "read on" something disclosed in the reference, i.e., all limitations of the claim are found in the reference. See Kalman v. Kimberly Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir.

1933). While it is true that there is nothing in the Root patent which expressly indicates that the heat transfer apparatus therein may be used in the manner set forth in appellant's claims on appeal, as we noted above, we agree with the examiner that the apparatus of Root is fully responsive to the subject matter set forth in claims 1, 2, 6, 7, 20, 22 and 23 on appeal and is inherently capable of being used in the manner required in those claims.

As was made clear in In re Schreiber, 128 F.3d at 1477, 44 USPQ2d at 1431, by choosing to define an element functionally as in appellant's claims on appeal, appellant assumes a risk, that risk being that where the U.S. Patent and Trademark Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied upon. In the present case, appellant has provided no evidence to prove that the heat transfer apparatus of Root lacks any of the structural elements of the

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claims on appeal, or that the subject matter shown to be in the prior art does not possess the characteristic relied upon, i.e., the limitations functionally defined in the claims on appeal.

We therefore agree with the examiner that the differences in the intended use of the heat transfer apparatus disclosed in Root and appellant's heat transfer apparatus do not patentably distinguish the claimed apparatus from that of Root.

For the above reasons, we will sustain the examiner's rejection of claims 1, 2, 6, 7, 20, 22 and 23 under 35 U.S.C. § 102(b) as being anticipated by Root.

The last rejection for our review is that of claim 21 under 35 U.S.C. § 103(a) as being unpatentable over Root. In this instance, the examiner recognizes that Root does not teach or suggest the use of heat transfer elements coated with a heat conductive material as defined in claim 21 on appeal. Nonetheless, the examiner has apparently concluded that it would have been obvious to one of ordinary skill in the art at the time of appellant's invention to provide the heat transfer elements

(a, b, c, d and w, x, y, z) of Root with such a coating of heat conductive material. The examiner's basis for this contention is apparently founded on Official Notice and the assertion that use of such coatings is old and well known and of such notorious character in the art that citation of a reference to such effect is deemed unnecessary. In the answer, pages 4-5, the examiner has further concluded that since appellant did not challenge the above-noted assertion regarding coatings of heat conductive material being old in the art, appellant has now conceded that such coatings are admitted prior art.

Even if we assume that coatings of heat conductive material are known in the art and that appellant has conceded such point, we share appellant's view as set forth on page 4 of the reply brief that there is no suggestion or incentive in Root to coat the aluminum fins therein with heat conductive material, since such elements apparently already function properly for their intended purpose. The mere fact that coatings of heat conductive material are known in the prior art, in and of itself, provides no motivation or suggestion for modifying the particular

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apparatus of Root to include such coatings. Thus, we will not sustain the examiner's rejection of claim 21 under 35 U.S.C. § 103(a).²

As is apparent from our above determinations, the decision of the examiner rejecting claims 1 and 4 of the present application under 35 U.S.C. § 112, second paragraph has been affirmed, as has the examiner's decision rejecting claims 1, 2, 6, 7, 20, 22 and 23 under 35 U.S.C. § 102(b) based on Root. However, the examiner's rejection of claim 21 under 35 U.S.C. § 103(a) based on Root has not been sustained.



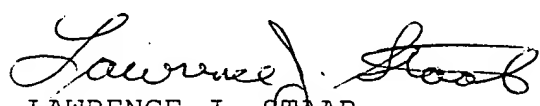
In accordance with the foregoing, the decision of the examiner is affirmed-in-part.

² If the examiner is of the opinion that prior art exits which would have provided an incentive or suggestion for applying a coating of heat conductive material to the aluminum fins of Root, then such prior art should be cited and properly applied.

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No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a).

AFFIRMED-IN-PART

)	
IRWIN CHARLES COHEN)	
Administrative Patent Judge)	
)	
)	BOARD OF PATENT
CHARLES E. FRANKFORT)	
Administrative Patent Judge)	APPEALS AND
)	
)	INTERFERENCES
LAWRENCE J. STAAB)	
Administrative Patent Judge)	

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CEF:pgg
William R. Gustavson
Suite 1185
9330 LBJ FRWY.
Dallas, TX 75243